DOCUMENT RESUME

ED 410 292 TM 027 139

AUTHOR Goldstein, Arnold A.
TITLE Design for Increasing the Participation of Students with Disabilities and Limited English Proficient Students in the National Assessment of Educational Progress (NAEP).
PUB DATE Mar 97
NOTE 12p.; Paper presented at the Annual Meeting of the American Educational Research Association (Chicago, IL, March 24-28, 1997).
PUB TYPE Reports - Evaluative (142) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Disabilities; Educational Assessment; Educational Trends; Elementary Secondary Education; Field Tests; *Limited English Speaking; National Surveys; *Research Design; *Sample Size; State Programs; *Student Participation; Trend Analysis
IDENTIFIERS *Large Scale Assessment; *National Assessment of Educational Progress

ABSTRACT

The National Assessment of Educational Progress (NAEP) has always included students with disabilities and limited English proficient (LEP) students in the sample to be assessed, but only in relatively limited numbers. Recent research has indicated that many students who have been excluded are in fact capable of participating. The National Center for Education Statistics has field tested the use of revised criteria for deciding whether students should participate in the assessment and various accommodations and adaptations to remove barriers to participation. Inclusion of more students with disabilities and LEP students was studied in three samples for the national NAEP mathematics and science assessments and in the state NAEP assessments in mathematics and science. Students with disabilities and LEP students were oversampled in the national assessments but not in the state assessments. Students with disabilities in one sample from the national assessments were offered various accommodations to remove barriers to their participation. Changes have been incorporated into the 1996 NAEP to further the goal of maximum inclusion of students with disabilities and LEP students, while maintaining trend measurements from past assessments and continuing to report on the academic performance of all students in the nation. These changes will result in an improved and more representative national assessment program and will benefit states and school districts as the NAEP often serves as a model for the best practice in large-scale assessment. (Contains one figure.) (SLD)

DESIGN FOR INCREASING THE PARTICIPATION OF STUDENTS WITH DISABILITIES AND LIMITED ENGLISH PROFICIENT STUDENTS IN THE NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS (NAEP)

BY
ARNOLD A. GOLDSTEIN
NATIONAL CENTER FOR EDUCATION STATISTICS

FOR PRESENTATION AT THE ANNUAL MEETING OF THE AMERICAN EDUCATIONAL RESEARCH ASSOCIATION

CHICAGO, IL
MARCH 1997

DESIGN FOR INCREASING THE PARTICIPATION OF STUDENTS WITH DISABILITIES AND LIMITED ENGLISH PROFICIENT STUDENTS IN THE NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS (NAEP)

by
Arnold A. Goldstein
National Center for Education Statistics

March 1997

The National Assessment of Educational Progress (NAEP) has always tried to be representative of the academic performance of all students in the nation. In the past, students with disabilities and limited English proficient (LEP) students were often excluded from NAEP. In the case of many students with disabilities, their Individualized Education Programs (IEPs) stipulated they were not to be tested. In other instances, school staff or parents believed these students were unable to participate due to their perceived limitations. Other students might have been able to take the assessment if certain modifications or accommodations were made to the testing environment to remove barriers to their participation, but, prior to the 1996 NAEP, these accommodations were not available. And some students were excluded by their schools because it was feared their presumably lower performance would decrease the school, district, or state average score.

NAEP has always included students with disabilities and LEP students in the sample selected to be assessed. In 1994, however, about one-third to half (depending on the grade) of the students with disabilities in the sample actually participated in the assessment, and about half to two-thirds of the LEP students (depending on the grade) participated.

Recent research has indicated that many students with disabilities and LEP students who were excluded from NAEP were in fact capable of participating in the assessment, especially if the criteria for including students were changed and if certain accommodations and adaptations were offered.[1] This research suggested that about 70 percent of the excluded 4th-grade students with disabilities and a sizable proportion of excluded LEP students could have participated in NAEP.

With the encouragement and counsel of various offices in the Department of Education, as well as nongovernmental organizations interested in the inclusion issue, in 1995 the National Center for Education Statistics (NCES) field-tested the use of revised criteria for deciding whether students should participate in the assessment, and various accommodations and adaptations to remove barriers to participation. Results indicated that these procedures could be implemented successfully in the full 1996 national assessments of mathematics and science.

The NAEP field test also raised certain methodological problems which only a fuller assessment could help to answer. These issues included:

- How could trends be measured from past assessments if procedures changed and greater proportions of students with disabilities and LEP students were assessed than in the past?

[1] Stancavage, F., et al. "Study of Exclusion and Assessability of Students with Disabilities in the 1994 Trial State Assessment of the National Assessment of Educational Progress." Also Stancavage, F., et al. "Study of Exclusion and Assessability of Students with Limited English Proficiency in the 1994 Trial State Assessment of the National Assessment of Educational Progress." In *Quality and Utility: the 1994 Trial State Assessment in Reading, Background Studies*. Stanford, CA: National Academy of Education, 1996.

- What would be the impact on the assessment of the changes in inclusion criteria and presence of accommodations?
- Would it be possible to include the results of accommodated students in the overall results, i.e., would those students perform on the assessment in a way similar to other students? If not, the responses of accommodated students could not be scaled along with responses from students assessed under nonaccommodated conditions.

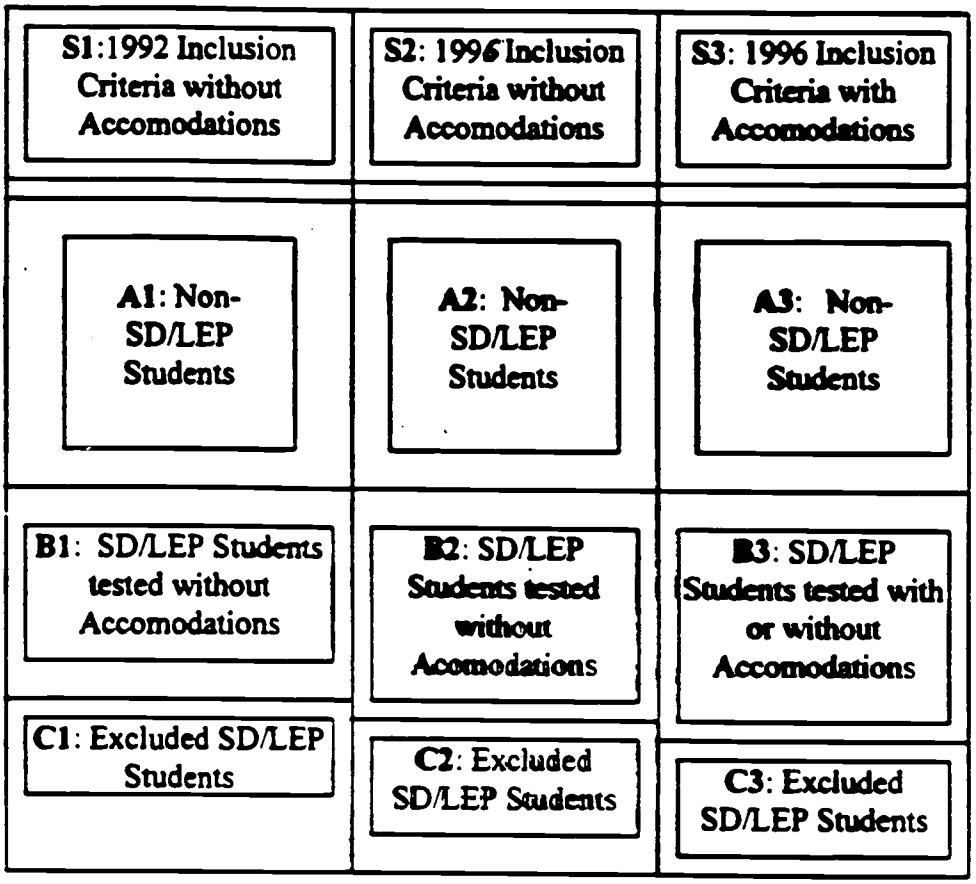
To answer these questions, and to perform the main task of measuring what the nation's students know and can do, the 1996 NAEP design included a research component.

Sample Design for the 1996 NAEP Mathematics Assessment—National Level

In 1996, mathematics and science were assessed nationally at the 4th, 8th, and 12th grades. In states that elected to participate, mathematics was assessed in the 4th and 8th grades, and science was assessed at the 8th grade.[2] In the national-level mathematics assessment, three roughly equal subsamples were created (n=3,500 approximately). Students with disabilities and LEP students were oversampled in all three subsamples. Figure 1 illustrates this sample design.

[2] At the 4th grade, 47 states and other jurisdictions participated; 44 jurisdictions participated at the 8th grade.

Figure 1
Sample Design for 1996 NAEP Mathematics Assessment



NAEP results are often used to measure the progress of students from past assessments. The 1996 mathematics results, for example, can be compared to those for 1992 and 1990. Such comparison, however, requires that testing conditions and the characteristics of the student sample remain equivalent over the assessments to be compared. Thus, it was necessary to assess at least part of the 1996 national sample using the same inclusion criteria as were used in 1990 and 1992, and accommodations could not be offered to students in that subsample, which was called "S1." By comparing results from S1 with those from the previous assessments, trends in performance could be presented.

The second subsample, designated "S2," was assessed using revised inclusion criteria for students with disabilities and for LEP students. No accommodations were offered to this subsample, however, so that the effect of the changes in criteria on participation and performance could be evaluated. The previously used criteria emphasized exclusion of students, whereas the revised criteria emphasized inclusion. For students with disabilities, the previous criteria instructed schools to exclude students from NAEP if they were "mainstreamed" less than 50 percent of the time in academic subjects, or if they were judged to be incapable of participating "meaningfully" in the assessment. The revised criteria for 1996 left less room for judgment on the part of school staff, and instructed schools to include students with disabilities unless their IEP stipulated they should not participate, or the students' IEP teams determined they could not participate, or if a student's cognitive functioning was so severely impaired that the student could not participate.

For LEP students, the previously used criteria instructed schools to exclude students if their native language was other than English, and they were enrolled in an English-speaking school (not including a bilingual education program) less than two years, and they were judged incapable of taking part in the assessment. The revised 1996 criteria instructed the school to include the students if they had received instruction in English for at least three years, or if the staff determined the students could participate in English even though they had received instruction in English less than three years.

The inclusion criteria for LEP students were changed because the old criteria were not working well. The staff of the Education Department's Office of Bilingual Education and Minority Language Affairs (OBEMLA), for example, pointed out that the term

"English-speaking school" did not necessarily mean that all its students were receiving instruction in English. All schools in the national sample are English-speaking. The OBEMLA staff also felt that two years of English instruction is not sufficient for a student to participate meaningfully, and advised that states with high concentrations of LEP students, such as California, Texas, Florida, Michigan, and Arizona, use three years of English instruction as their criterion for inclusion in assessments. While the 1996 criterion of three years is more restrictive than the previously used two-year threshold, bilingual educators contend that the new criteria are more appropriate and consistent with research studies in this area.

The students with disabilities and the LEP students in the third subsample in the 1996 NAEP in mathematics, designated "S3," were offered various accommodations and adaptations. By restricting these modifications to students in S3, it is possible to compare the results obtained under nonstandard testing conditions to those assessed under standard conditions, both with the new and old criteria.

The presence of accommodations in S3 meant that the criteria for inclusion were slightly different from those used in S2. Students with disabilities and LEP students were to be included in the assessment if they could participate with the available accommodations. The accommodations are described in a later section of this paper.

Sample Design for the 1996 NAEP Science Assessment—National Level

The science assessment presented a simpler sample design problem. There was no need to measure the trend from previous assessments because the 1996 assessment was based on a new framework. While there was a science assessment in 1990, the 1996

assessment tested different content, incorporated more hands-on experiments, and placed greater emphasis on extended-response items, in which students are asked to explain their solutions and reasoning. These changes prevent meaningful comparisons with results from the earlier assessment.

With no trend to be measured in the science assessment, S1 could be dropped. There was no need to recreate the conditions of the previous assessment. Only S2, in which the new inclusion criteria were used, and S3, in which accommodations were offered as well, were needed.

Sample Design for State Assessments in Mathematics and Science

In addition to a national sample, as mentioned above, NAEP also assesses representative samples in states that elect to participate. In 1996, mathematics was assessed at grades 4 and 8, and science was assessed at grade 8.

No accommodations were offered in the state assessments. The states themselves are responsible for administering NAEP at the state level. It was decided not to impose the burden of providing accommodations on the states in 1996. States had already agreed to participate without being asked provide accommodations. Additionally, there were concerns that the accommodations might not be administered in a uniform manner across all states, thus losing comparability of results. Thus, there was no S3 at the state level.

Both the mathematics and science assessments in the states were conducted using subsamples S1 and S2. This strategy permitted measuring trends from previous mathematics assessments, as S1 students were assessed under the same conditions and using the same inclusion criteria as in 1990 and 1992. While there was no trend to maintain in science, administering the science assessment to half the schools in the states

using the previous inclusion criteria provided further evidence of the effect of the new inclusion criteria when compared with results from the S2 subsample, and in comparison to national-level results. There was no oversampling of students with disabilities or LEP students at the state level.

Accommodations Provided to Students with Disabilities

Students with disabilities in the national S3 sample were offered various accommodations to remove barriers to their participation. These students were given whatever accommodations they received as part of their Individualized Education Program. The accommodation requested most often was extended time. Since NAEP is not a "speed" test, it was believed this accommodation would not make the assessment easier for students who used it, but it would allow those with disabilities who need more time to better show their knowledge. Other accommodations included one-on-one testing, help with directions, reading items aloud, signing for the deaf, and provision of Braille or large-print versions of the assessment. In science, physically or visually handicapped students were exempted from the hands-on tasks if necessary.

LEP students in S3 in mathematics only were offered a bilingual version of the test booklets in facing Spanish and English pages. (Spanish was provided because about 70 percent of LEP students are Spanish-speaking.) While no bilingual booklets were provided for the science assessment, LEP students were offered Spanish-English glossaries and word lists.

While the results from the 1996 assessment are not yet analyzed, it is likely that accommodations will continue to be provided to some extent in future NAEP

assessments. Many states are also offering accommodations to students with disabilities and to LEP students in their own assessments.

Research Issues

The main question to be answered by this large NAEP experimental design is whether the introduction of revised inclusion criteria and accommodations to testing conditions resulted in increased participation of students with disabilities or LEP students. Recent data from the 1996 NAEP Mathematics Report Card for the Nation and the States[3] indicate that the revised criteria alone did not result in increased participation rates, but that the provision of accommodations did result in greater inclusion.

A major issue is the validity of results for students assessed under nonstandard, or accommodated, conditions. Does the assessment measure the same thing when testing conditions differ? Are the same skills being measured? Research toward answering these questions is being conducted in the analysis of the results from the different subsamples, especially the analyses of item-specific statistics for students using the accommodations compared to students assessed under standard conditions.

NCES is striving to determine the best assessment practices, which result in the maximum possible inclusion of students with disabilities and LEP students, and that yield results that measure what those students know and can do in a valid way. To further this objective, NCES is sponsoring several research projects. For example, researchers at the National Center for Research on Evaluation, Standards, and Student Testing (CRESST) are exploring the role of native language proficiency in the performance of LEP students

[3] Reese, C.M., Miller, K.E., Mazzeo, J.and Dossey, J.A. *1996 NAEP Mathematics Report Card for the Nation and the States.* Washington, DC: National Center for Education Statistics, 1997, chapter 4.

in bilingual assessments, and the use of simplified wording and Spanish translations of math items for these students. Another study, being conducted by the Council of Chief State School Officers (CCSSO), is investigating whether more accurate scoring of responses to math and science items from LEP students can be obtained by training scorers to recognize the linguistic patterns of syntax and spelling used by non-native speakers of English, so they can separate respondents' content knowledge from their English-language skills.[4]

Conclusion

Changes were incorporated into the 1996 NAEP to further the goal of maximum inclusion of students with disabilities and LEP students, while maintaining trend measurements from past assessments and continuing to report on the academic performance of all students in the nation in a valid and reliable way. These changes will result in an improved and more representative national assessment program. These inclusion efforts will also benefit states and school districts, as NAEP often serves as a model for the best practice in large-scale assessment.

[4] Inclusion practices in the states and research activities related to inclusion being conducted by federal and nonfederal organizations are reviewed in Olson, J. and Goldstein, A. *The Inclusion of Students with Disabilities and Limited English Proficient Students in Large-Scale Assessments: A Summary of Recent Progress*. National Center for Education Statistics, forthcoming.

TM027139

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
Educational Resources Information Center (ERIC)

REPRODUCTION RELEASE

(Specific Document)

I. DOCUMENT IDENTIFICATION:

Title: DESIGN FOR INCREASING THE PARTICIPATION OF STUDENTS WITH DISABILITIES AND LIMITED ENGLISH PROFICIENT STUDENTS IN THE NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS (NAEP)

Author(s): ARNOLD A. GOLDSTEIN

Corporate Source: NATIONAL CENTER FOR EDUCATION STATISTICS, U.S. DEPT. OF EDUCATION

Publication Date: MARCH 1997

II. REPRODUCTION RELEASE:

In order to disseminate as widely as possible timely and significant materials of interest to the educational community, documents announced in the monthly abstract journal of the ERIC system, *Resources in Education* (RIE), are usually made available to users in microfiche, reproduced paper copy, and electronic/optical media, and sold through the ERIC Document Reproduction Service (EDRS) or other ERIC vendors. Credit is given to the source of each document, and, if reproduction release is granted, one of the following notices is affixed to the document.

If permission is granted to reproduce and disseminate the identified document, please CHECK ONE of the following two options and sign at the bottom of the page.

	The sample sticker shown below will be affixed to all Level 1 documents	The sample sticker shown below will be affixed to all Level 2 documents	
☑ Check here **For Level 1 Release:** Permitting reproduction in microfiche (4" x 6" film) or other ERIC archival media (e.g., electronic or optical) *and* paper copy.	PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY Sample TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)	PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN OTHER THAN PAPER COPY HAS BEEN GRANTED BY Sample TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)	☐ Check here **For Level 2 Release:** Permitting reproduction in microfiche (4" x 6" film) or other ERIC archival media (e.g., electronic or optical), but *not* in paper copy.
	Level 1	**Level 2**	

Documents will be processed as indicated provided reproduction quality permits. If permission to reproduce is granted, but neither box is checked, documents will be processed at **Level 1.**

"I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce and disseminate this document as indicated above. Reproduction from the ERIC microfiche or electronic/optical media by persons other than ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for non-profit reproduction by libraries and other service agencies to satisfy information needs of educators in response to discrete inquiries."

Sign here→ please

Signature: Arnold A. Goldstein	Printed Name/Position/Title: ARNOLD A. GOLDSTEIN EDUCATION POLICY ANALYST	
Organization/Address: NATIONAL CENTER FOR EDUCATION STATISTICS 555 NEW JERSEY AVE., NW WASHINGTON, DC 20208-5653	Telephone: 202-219-1741	FAX: 202-219-1801
	E-Mail Address: arnold_goldstein@ed.gov	Date: May 14, 1997

CUA

THE CATHOLIC UNIVERSITY OF AMERICA
Department of Education, O'Boyle Hall
Washington, DC 20064

800 464-3742 (Go4-ERIC)

April 25, 1997

Dear AERA Presenter,

Hopefully, the convention was a productive and rewarding event. We feel you have a responsibility to make your paper readily available. If you haven't done so already, please submit copies of your papers for consideration for inclusion in the ERIC database. If you have submitted your paper, you can track its progress at http://ericae2.educ.cua.edu.

Abstracts of papers accepted by ERIC appear in *Resources in Education (RIE)* and are announced to over 5,000 organizations. The inclusion of your work makes it readily available to other researchers, provides a permanent archive, and enhances the quality of *RIE*. Abstracts of your contribution will be accessible through the printed and electronic versions of *RIE*. The paper will be available through the microfiche collections that are housed at libraries around the world and through the ERIC Document Reproduction Service.

We are soliciting all the AERA Conference papers and will route your paper to the appropriate clearinghouse. You will be notified if your paper meets ERIC's criteria for inclusion in *RIE*: contribution to education, timeliness, relevance, methodology, effectiveness of presentation, and reproduction quality.

Please sign the Reproduction Release Form on the back of this letter and stet **two** copies of your paper. The Release Form gives ERIC permission to make and distribute copies of your paper. It does not preclude you from publishing your work. You can mail your paper to our attention at the address below. Please feel free to copy the form for future or additional submissions.

Mail to: AERA 1997/ERIC Acquisitions
The Catholic University of America
O'Boyle Hall, Room 210
Washington, DC 20064

Sincerely,

Lawrence M. Rudner, Ph.D.
Director, ERIC/E